

FIG. 1

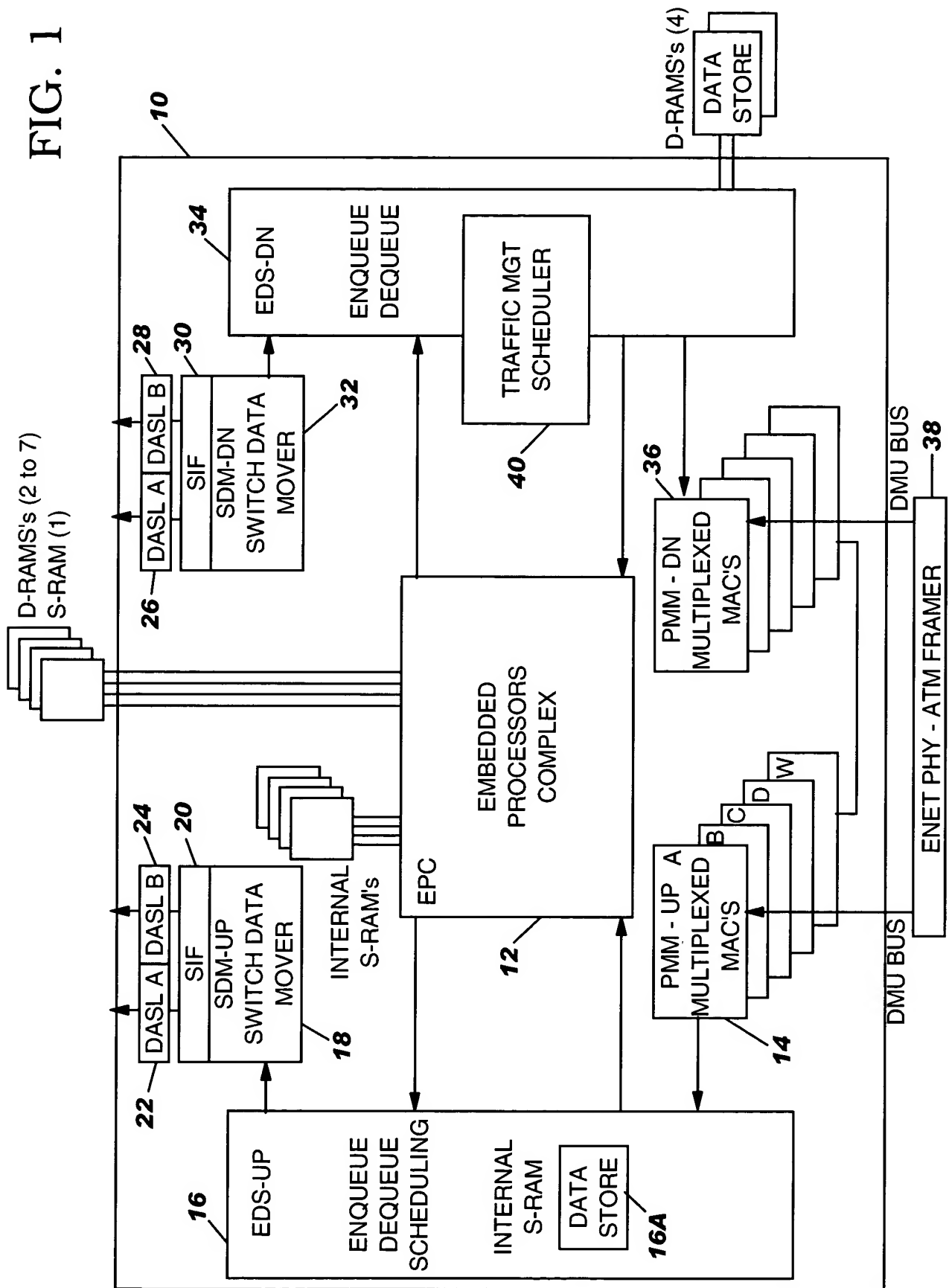
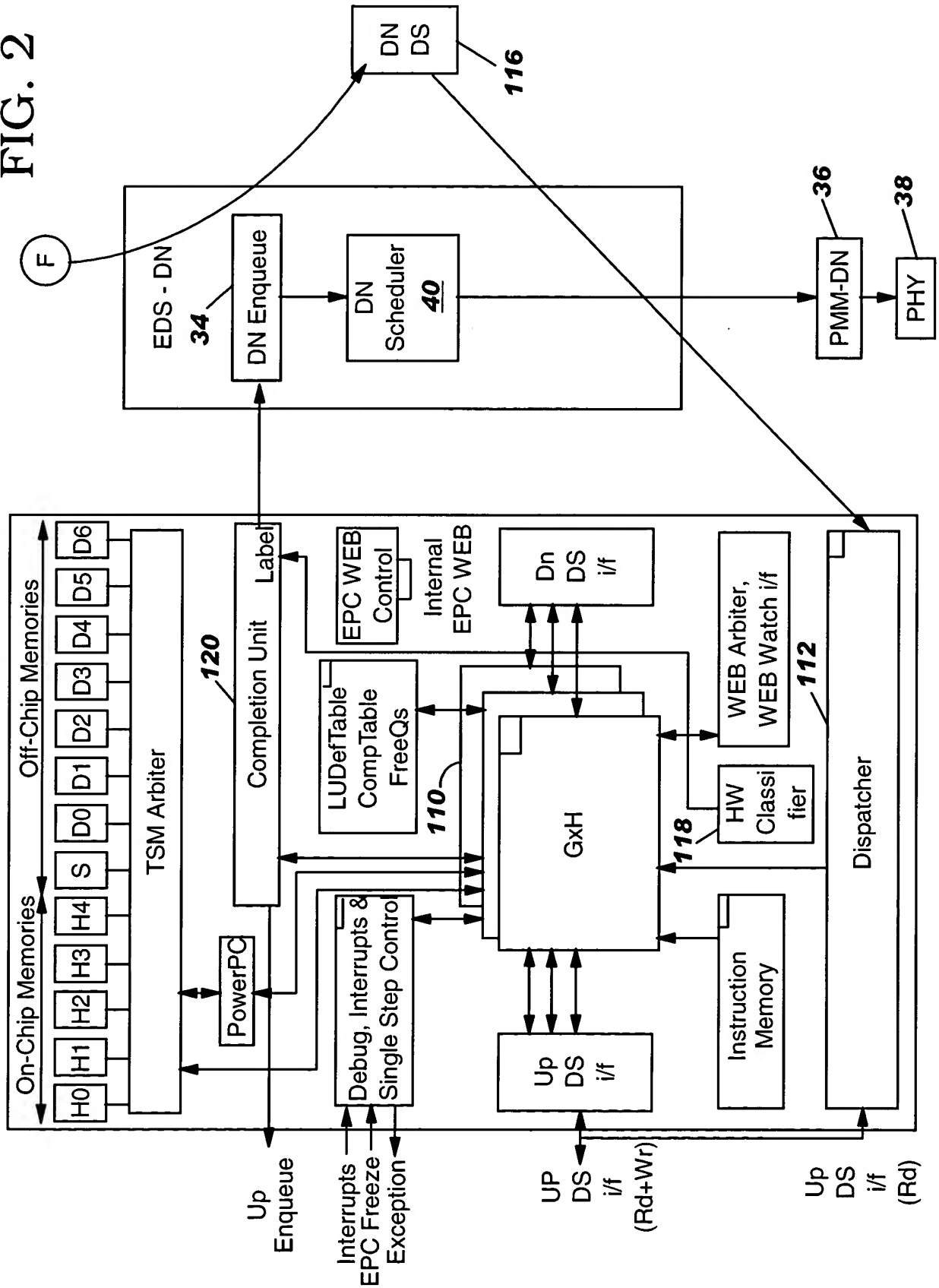


FIG. 2



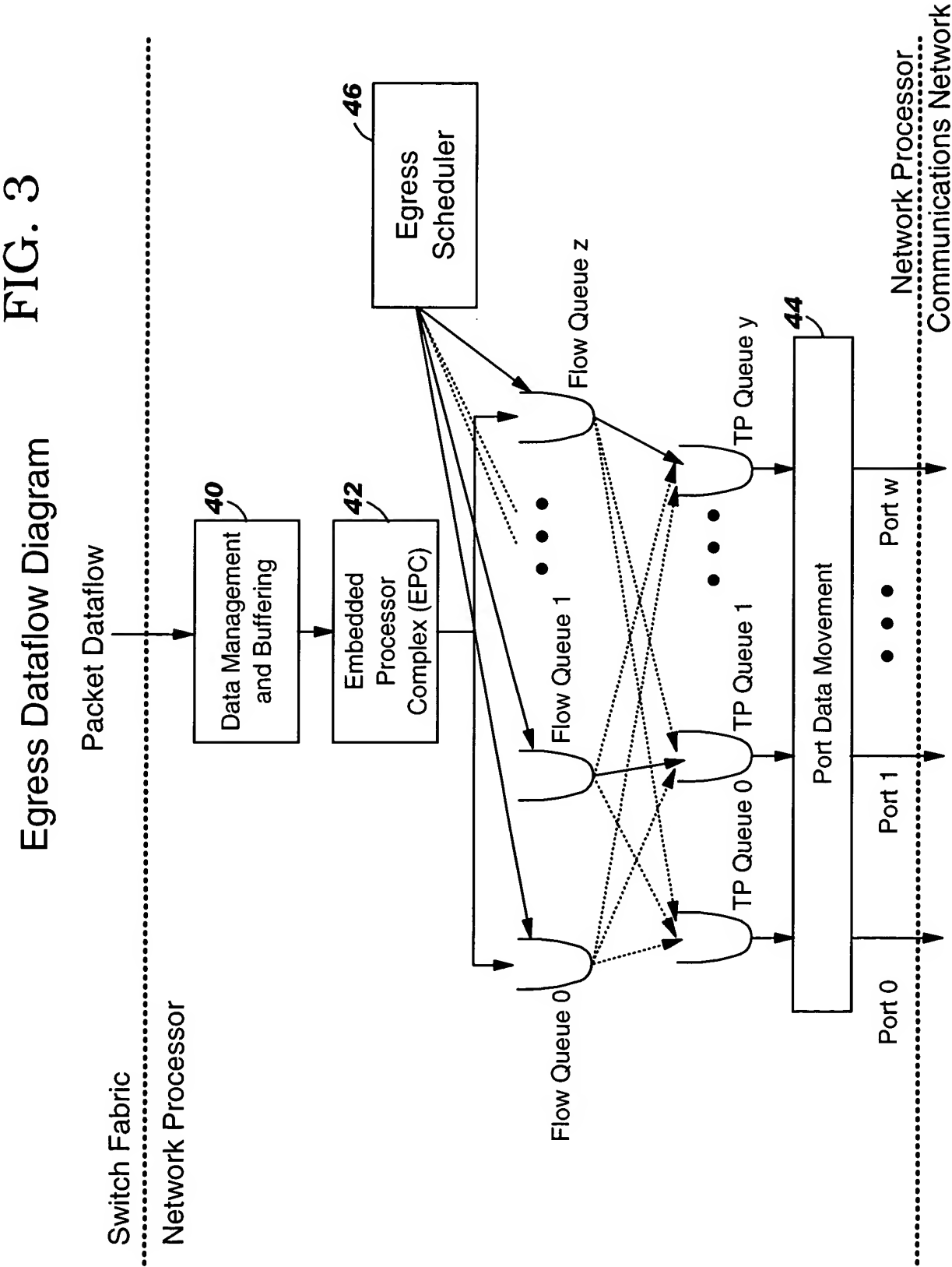
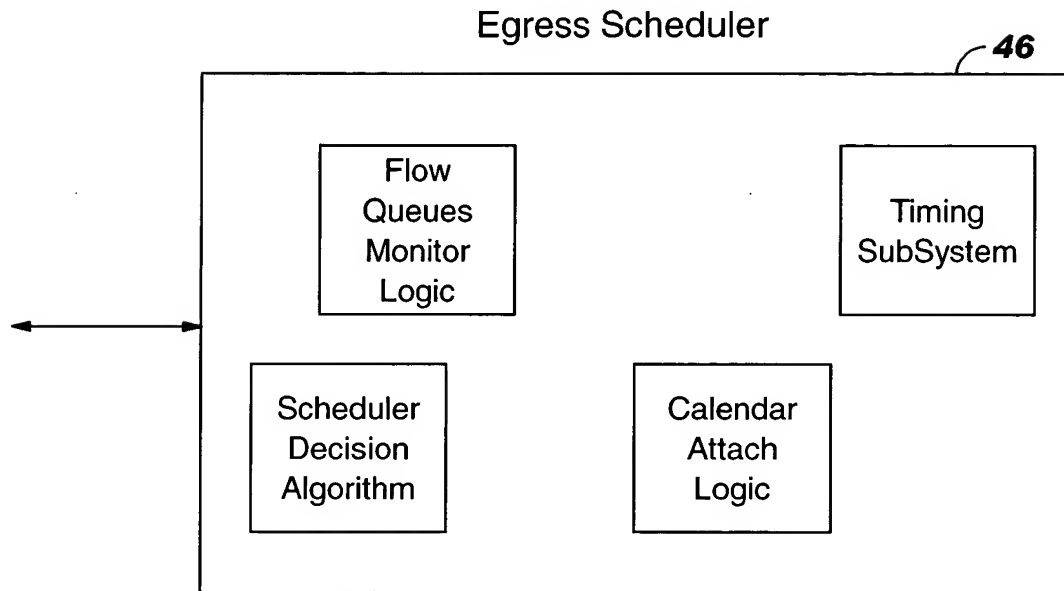


FIG. 4



517

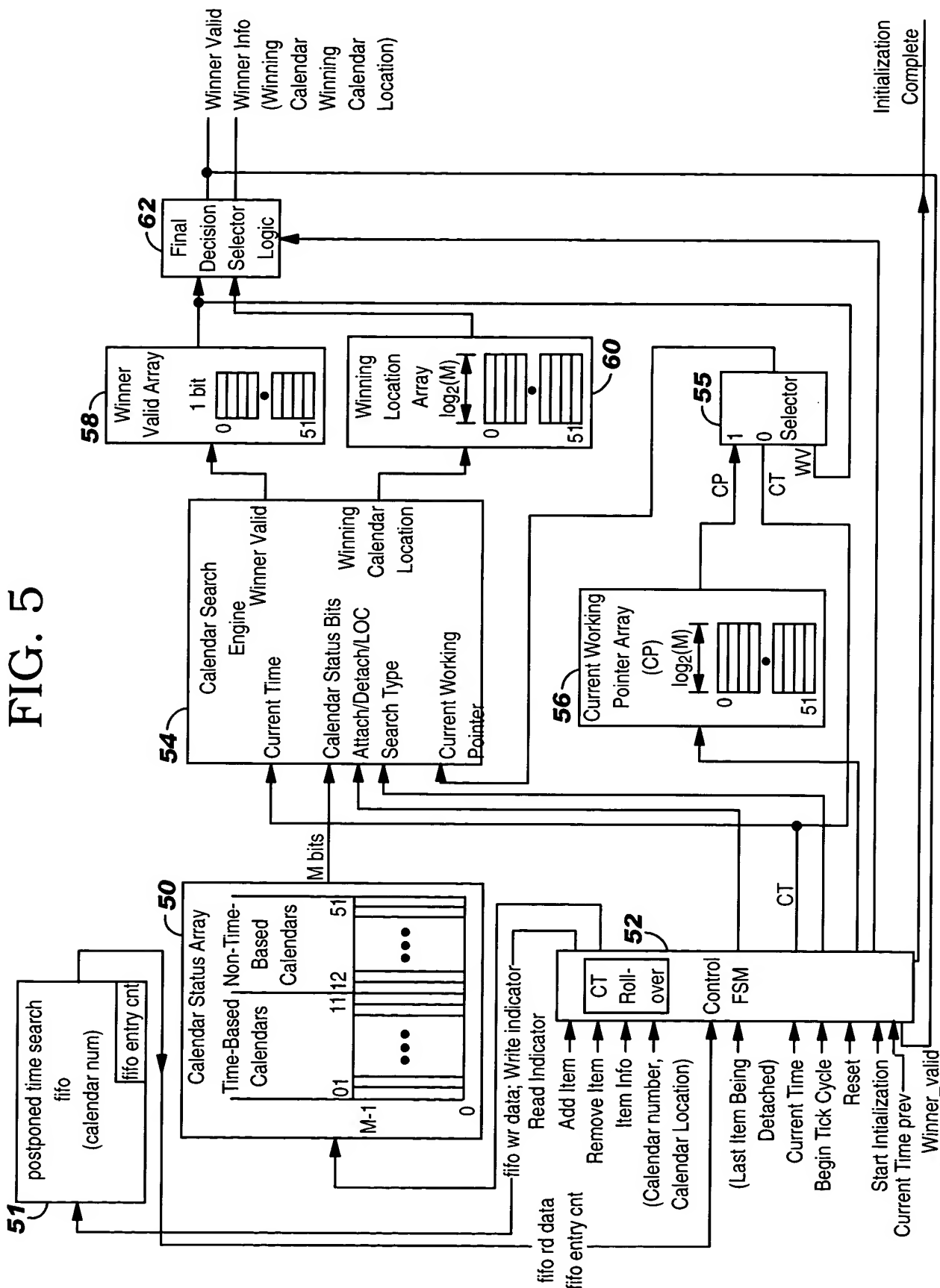




FIG. 6B

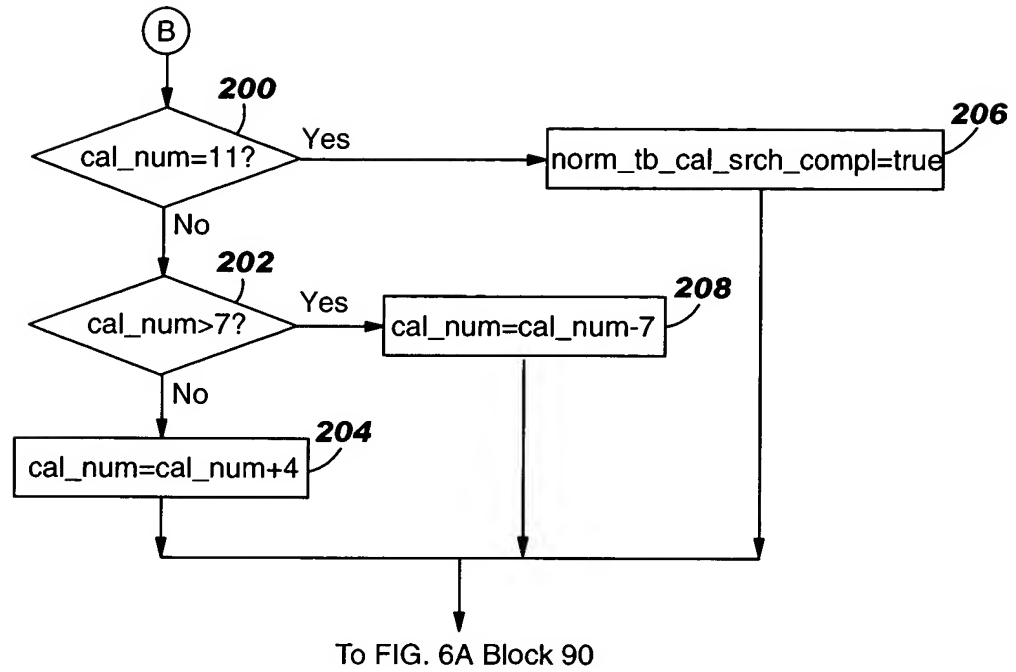


FIG. 6C

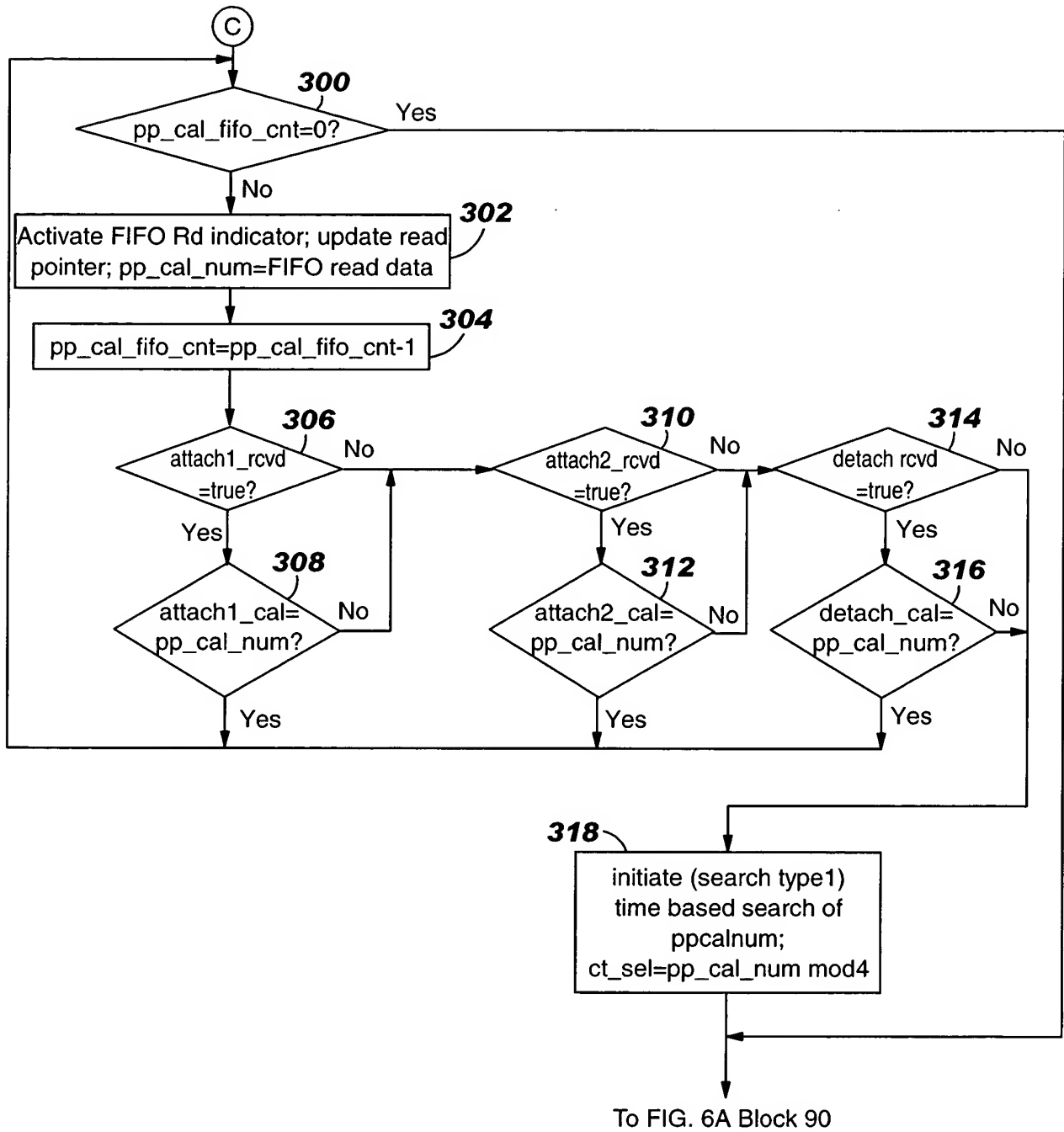




FIG. 6D

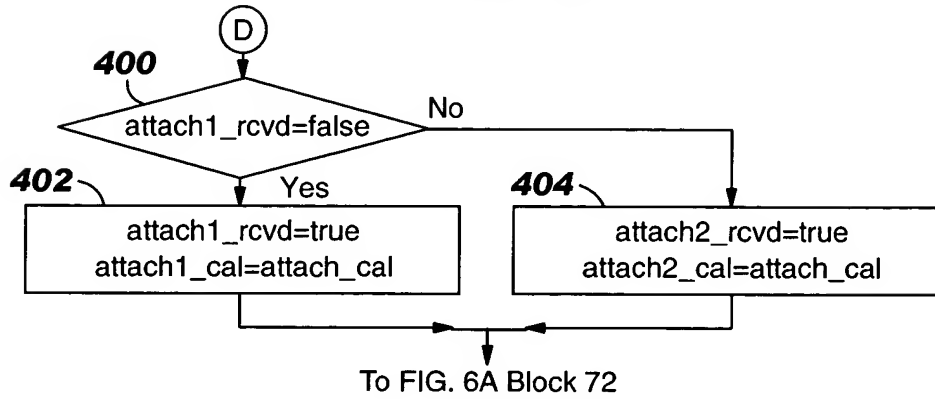


FIG. 6E

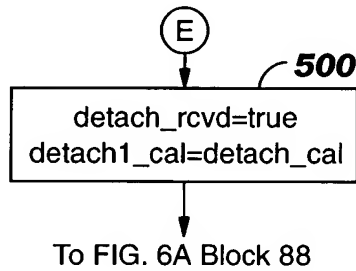


FIG. 6F

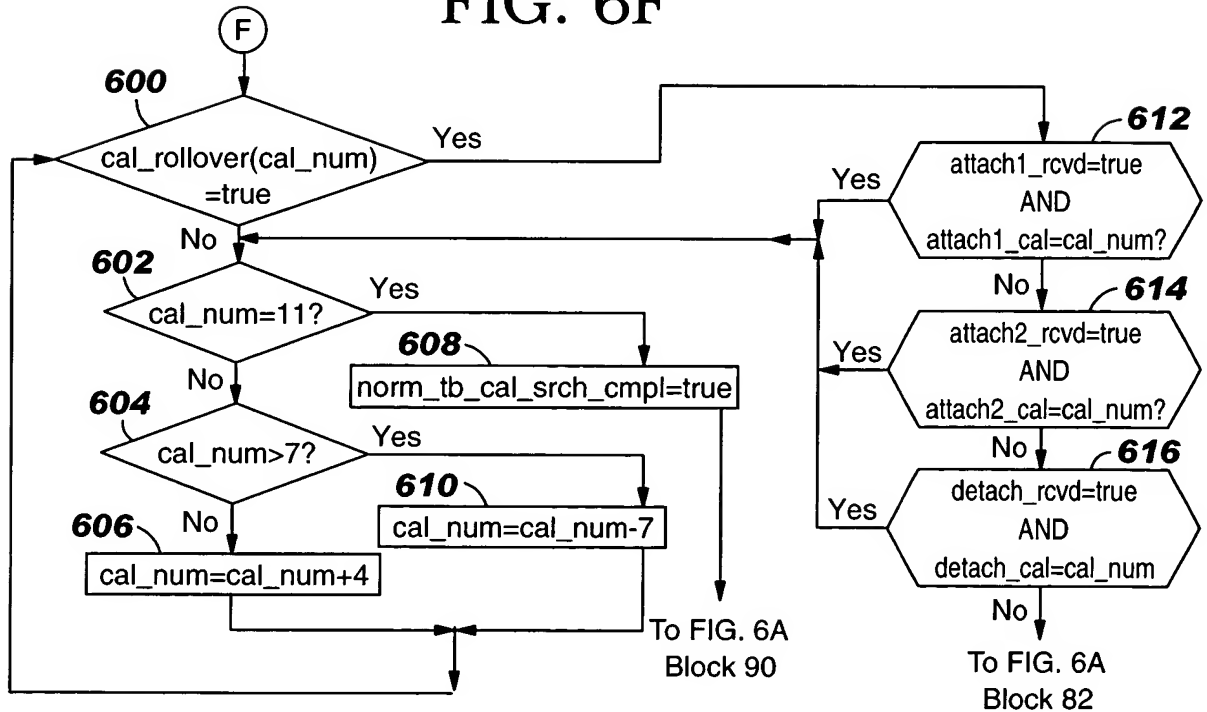


FIG. 6G

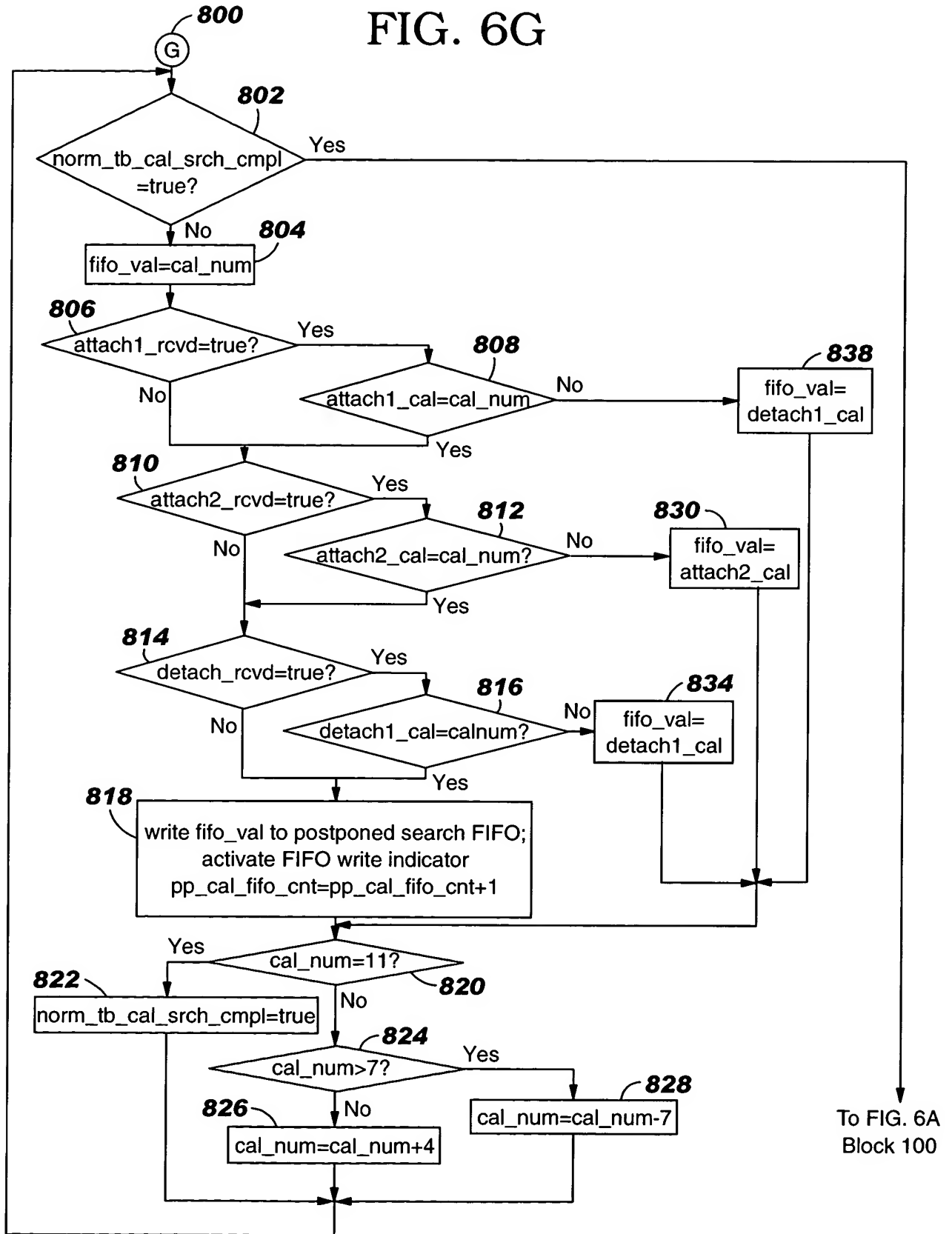


FIG. 7

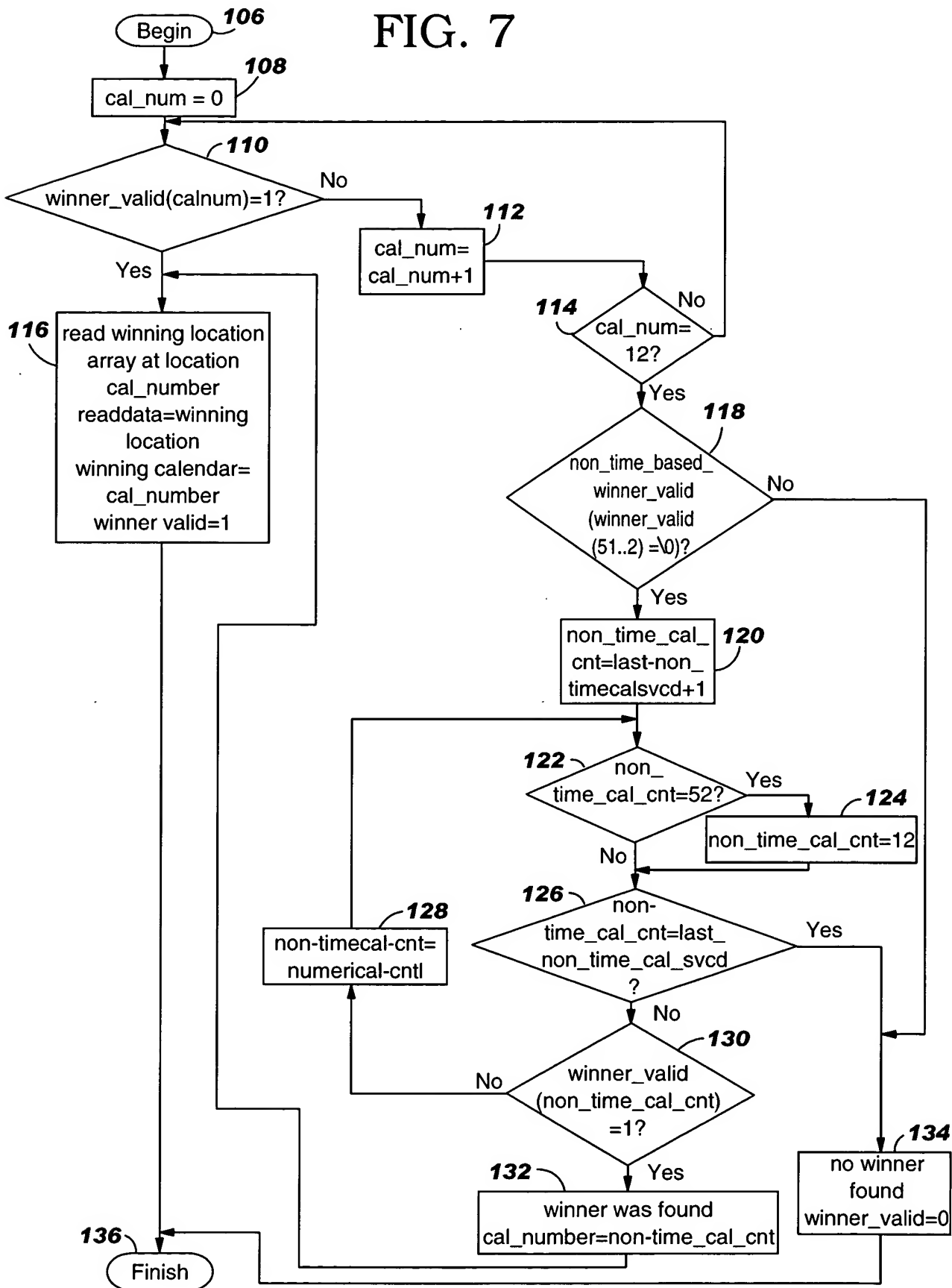


FIG. 8

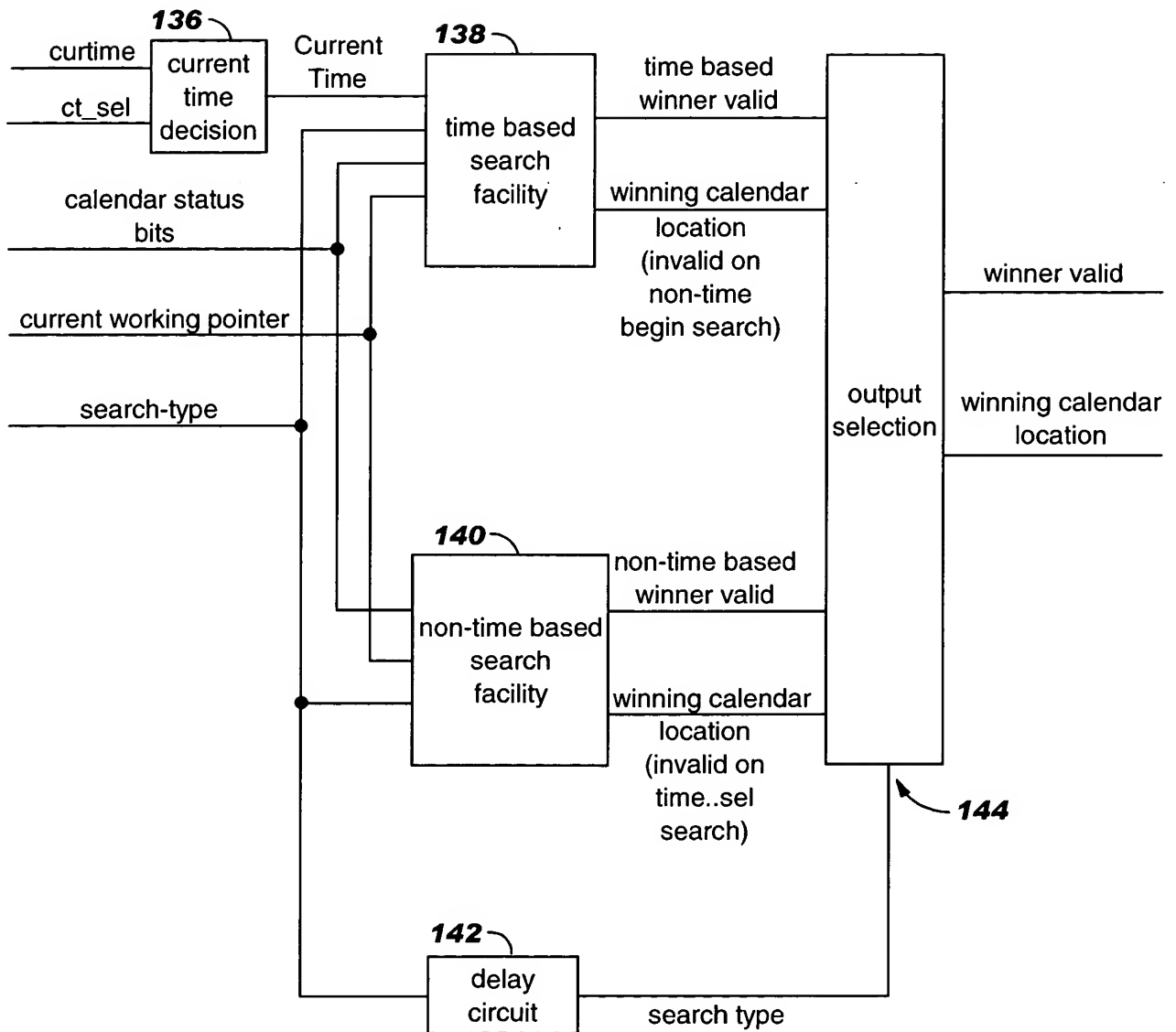


FIG. 9

**TABLE I. Initialization**

<b>Clock Cycle Number</b>	<b>Array Location</b>	<b>Array Name(s)</b>	<b>Access Type</b>	<b>Write Data</b>
1	0	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
2	1	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
3	2	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
4	3	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
.	.	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
.	.	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
.	.	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
50	49	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
51	50	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero
52	51	Calendar Status CP Winner Valid	Write Write Write	All Zeroes All Zeroes Zero

FIG. 10

TABLE II. Search Sequence with Neither Attaches Nor Detaches

Clock Cycl Number	Array Location	Array Name(s)	Access Type	Write Data	Search Engine Inputs	Search Engine Output
1	0	Calendar Status	Read	N/A	N/A	N/A
1	0	CP	Read	N/A	N/A	N/A
2	1	Calendar Status	Read	N/A	Calendar 0 Status	N/A
2	1	CP	Read	N/A	Calendar 0 CP Time- based search	N/A
3	2	Calendar Status	Read	N/A	Calendar 1 Status	Calendar 0 Search
3	2	CP	Read	N/A	Calendar 1 CP	
3	0	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
3	0	Winning Location	Write	Search Engine Winning_Location Output		
4	3	Calendar Status	Read	N/A	Calendar 2 Status	Calendar 1 Search
4	3	CP	Read	N/A	Calendar 2 CP	
4	1	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
4	1	Winning Location	Write	Search Engine Winning_Location Output		
5	4	Calendar Status	Read	N/A	Calendar 3 Status	Calendar 2 Search
5	4	CP	Read	N/A	Calendar 3 CP	
5	2	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
5	2	Winning Location	Write	Search Engine Winning_Location Output		
6	5	Calendar Status	Read	N/A	Calendar 4 Status	Calendar 3 Search

FIG. 10 (cont'd)

TABLE II (cont'd)

6	5	CP	Read	N/A	Calendar 4 CP	
6	3	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
6	3	Winning Location	Write	Search Engine Winning_ Location Output		
7	6	Calendar Status	Read	N/A	Calendar 5 Status	Calendar 4 Search
7	6	CP	Read	N/A	Calendar 5 CP	
7	4	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
7	4	Winning Location	Write	Search Engine Winning_ Location Output		
8	7	Calendar Status	Read	N/A	Calendar 6 Status	Calendar 5 Search
8	7	CP	Read	N/A	Calendar 6 CP	
8	5	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
8	5	Winning Location	Write	Search Engine Winning_ Location Output		
.	.					
.	.					
.	.					
12	11	Calendar Status	Read	N/A	Calendar 10 Status	Calendar 9 Search
12	11	CP	Read	N/A	Calendar 10 CP	
12	9	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
12	9	Winning Location	Write	Search Engine Winning_ Location Output		
13	N/A	Calendar Status	Read	N/A	Calendar 11 Status	Calendar 10 Search
13	N/A	CP	Read	N/A	Calendar 11 CP	
13	10	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
13	10	Winning Location	Write	Search Engine Winning_ Location Output		

FIG. 10 (cont'd)

TABLE II (cont'd)

14	N/A	N/A	N/A	N/A	N/A	Calendar 11 Search
14	N/A	N/A	N/A	N/A	N/A	
14	11	Winner Valid	Write	Search Engine Winner_Valid Output		
14	11	Winning Location	Write	Search Engine Winning_ Location Output		
15	1st winner found in Winner Valid Array	Winning Location	Read	N/A	Winner_Valid and Winner Info is at the output	
16	No Activity					
17	No Activity					
18	No Activity					
19	No Activity					
20	Winning Index	Winning location	Read	N/A		



FIG. 11

TABLE III. Type I Search

Clock Cycle Number	Array Location	Array Name(s)	Access Type	Write Data	Search Engine Inputs	Search Engine Output	Comments
1	N	Calendar Status	Read	N/A	N/A	N/A	Cycle initiated
1	N	Winner_Valid	Read	N/A	N/A	N/A	If the Winner_valid value for location N is logic 0, the CP value that is presented to the search engine on cycle 2 will be equal to the Calendar N CT, as per the algorithm definition
1	N	CP	Read	N/A	N/A	N/A	First cycle of Calendar N Search, No attaches nor detaches
2	N/A	N/A	N/A		Calendar N Status Calendar N CP Calendar N CT Time-based Search No Attach No Detach	N/A	
3	N	Winner Valid	Write	Search Engine Winner_Valid Output	N/A	Winner_Valid and Winning_Location	
3	N	Winning Location	Write	Search Engine Winning_Location Output	N/A		

**FIG. 12**

**TABLE IV. Type II Search**

Clock Cycle Number	Array Location	Array Name(s)	Access Type	Write Data	Search Engine Inputs	Search Engine Output	Comments
1	N	Calendar Status	Read	N/A	N/A	N/A	Cycle initiated. Calendar attach location is at input to structure
1	N	Winner_Valid	Read	N/A	N/A	N/A	If the Winner_Valid value for location N is logic 0, the CP value that is presented to the search engine on cycle 2 will be the Calendar N CT, as per the algorithm definition. If the value is logic 1, the CP_array read data will be the CP value used. (Time-based searches only)
1	N	CP	Read	N/A	N/A	N/A	
2	N/A	N/A	N/A		Calendar N Status Calendar N CP Calendar N CT Time-based Search Attach Indication Attach Calendar and Location		First cycle of Calendar N Search. The Search Engine takes into account that the Calendar Status does not reflect the current attach. State of the "pre-updated" attach status bit is reported to the top-level Egress Scheduler Structure
3	N	Winner Valid	Write	Search Engine Winner_Valid Output	N/A	Winner_Valid and Winning_Location	
3	N	Winning Location	Write	Search Engine Winning Location Output	N/A		
3	N	Calendar Status	Write	Logic 1 to bit position corresponding to attach location (other bits preserved)	N/A	N/A	Calendar status now reflects the attach.

**FIG. 13**

**TABLE V. Type III Search**

Clock Cycle Number	Array Location	Array Name(s)	Access Type	Write Data	Search Engine Inputs	Search Engine Output	Comments
1	M	Calendar Status	Read	N/A	N/A	N/A	Cycle Initiated. Calendar attach location is at input to structure
1	M	CP	Read	N/A	N/A	N/A	
2	N/A	N/A	N/A		Calendar M Status Calendar N CP (CP Array Read Data) Non-Time-based Search Attach Indication Attach Calendar and Location		First cycle of Calendar M Search. The Search Engine takes into account that the Calendar Status does not reflect the current attach. State of the "pre-updated" attach status bit is reported to the top-level Egress Scheduler Structure
3	M	Winner Valid	Write	Search Engine Winner_Valid Output	N/A	Winner_Valid and Winning_Location	
3	M	Winning Location	Write	Search Engine Winning_Location Output	N/A		
3	M	Calendar Status	Write	Logic 1 to bit position corresponding to attach location (other bits preserved)	N/A	N/A	Calendar Status Array now reflects the attach.

FIG. 14

TABLE VI. Type IV Search

Clock Cycle Number	Array Location	Array Name(s)	Access Type	Write Data	Search Engine Inputs	Search Engine Output	Comments
1	N	CalendarStatus	Write	Write inverse of LBD input to location corresponding to the Calendar detach location. Other bits preserved	N/A	N/A	Cycle initiated. Calendar attach location is at input to structure
2	N	CalendarStatus	Read	N/A	N/A	N/A	
2	N	Winner_Valid	Read	N/A	N/A	N/A	If the Winner_valid value for location N is logic 0, the CP value that is presented to the search engine on cycle 3 will be the Calendar N CT, as per the algorithm definition. If the value is logic 1, the CP_array read data will be the CP value used. (Time-based searches only)
2	N	CP	Read	N/A	N/A	N/A	
3	N	CP	Write	Calendar Detach Location			
3	N/A	N/A	N/A		Calendar N Status Calendar N CP Calendar N CT Time-based Search Attach Indication Attach Calendar and Location		First cycle of Calendar N Search. The Search Engine takes into account that the Calendar Status does not reflect the current attach. State of the "pre-updated" attach status bits reported to the top-level Egress Scheduler Structure
4	N	WinnerValid	Write	Search Engine Winner_Valid Output	N/A	Winner_Valid and Winning_Location	
4	N	WinningLocation	Write	Search Engine Winning_Location Output	N/A		

FIG. 15

TABLE VII. Type V Search

Clock Cycle Number	Array Location	Array Name(s)	Access Type	Write Data	Search Engine Inputs	Search Engine Output	Comments
1	N	CalendarStatus	Write	Write inverse of LBD input to location corresponding to the Calendar detach location. Other bits preserved	N/A	N/A	Cycle initiated. Calendar attach location is at input to structure
2	M	CalendarStatus	Read	N/A	N/A	N/A	Cycle initiated. Calendar attach location is at input to structure
2	M	CP	Read	N/A	N/A	N/A	
3	N/A	N/A	N/A		Calendar M Status Calendar NCP (CP Array Read Data) Non-Time-based Search Attach Indication Attach Calendar and Location		First cycle of Calendar M Search. The Search Engine takes into account that the Calendar Status does not reflect the current attach. State of the "pre-updated" attach status bits is reported to the top-level Egress Scheduler Structure
4	M	Winner Valid	Write	Search Engine Winner_Valid Output	N/A	Winner_Valid and Winning_Location	
4	M	Winning Location	Write	Search Engine Winning_Location Output	N/A		
4	M	CalendarStatus	Write	Logic 1 to bit position corresponding to attach location (other bits preserved)	N/A	N/A	Calendar Status Array now reflects the attach.

FIG. 16

